

REMARKS/ARGUMENTS

Claims 1-3 and 20-27 are active. Claims 4-19 and 28-32 have been withdrawn from consideration, however, the Applicants respectfully submit that method of treatment Claims 15, 16 and 28-32 are also active. Claim 1 has been amended to specify an isolated yeast. Accordingly, the Applicants do not believe that any new matter has been added.

The Applicants thank Examiner Lilling for the courteous and helpful discussion of September 14, 2004. To address the “product-of-nature” rejection under 35 U.S.C. 101, it was suggested that the claims be amended to specify an “isolated” yeast. Whether or not the cited prior art disclosed an amount of *Kluyveromyces* yeast which would inherently reduce cholesterol levels was discussed. Differences between composition claims directed to reducing cholesterol levels and method of treatment claims for reducing cholesterol levels were reviewed. The Applicants requested that the Examiner acknowledge that method of treatment Claims 15 and 16 were part of the previously elected group of claims and indicate that these claims were subject to examination.

Restriction

The Restriction Requirement has now been made FINAL. The Official Action mailed July 16, 2004 (section 3) indicates that the method claims will be provisionally rejoined upon an indication of allowability for any of the composition claims. However, the Applicants note that the Restriction Requirement mailed August 8, 2003 indicates that the method of treatment claims (e.g., Claims 15 and 16) are part of the elected group which includes the composition claims. Accordingly, the Applicants respectfully request that the examiner acknowledge the examination of these claims as well as Claims 28-32 which depend from Claim 15, or issue a new Restriction Requirement.

Rejection—35 U.S.C. 101

Claims 1, 3, 21, 23 and 24 were rejected under 35 U.S.C. 101 as being directed to non-statutory subject matter. This rejection is moot in view of the amendment of independent Claim 1 to specify an isolated yeast.

Rejection—35 U.S.C. 102/103

Claims 1-3 and 21-24 were rejected under 35 U.S.C. 102(b) as being anticipated by, or in the alternative, as being unpatentable under 35 U.S.C. 103(a) over Muys et al., U.S. Patent No. 3,995,066. Claims 1-3 and 21-24 are composition claims. Muys et al. do not anticipate or render the present invention obvious because they do not disclose or suggest formulation of a composition comprising an amount of *Kluyveromyces* sufficient to reduce cholesterol in a subject. Rather, Muys et al. are concerned with reducing the oxidation of lipids in fatty foods such as margarine and butter. This reference describes certain yeast strains (including certain strains of *Kluyveromyces lactis*) which are able to reduce the oxidation of unsaturated fats contained in fat foods and thereby prevent such foods from deteriorating organoleptically. See column 1, lines 164-168 and column 2, lines 134-139, which reads as follows, respectively:

“A particular advantage of the emulsion of the present invention is that they can be prepared without strict requirements as regards oxygen-free processing and packaging and that nevertheless autoxidation of unsaturated fats is at least considerably reduced.” Another advantage is that the emulsions of the invention are not detrimentally affected from an organoleptic point of view, which means that they do not obtain a “yeasty” taste and that the yeasts can keep the oxygen content sufficiently low at storage, even when insufficiently airtight packs are used.”

Muys do not disclose with sufficient specificity the selection of a *Kluyveromyces* strain or the selection of an amount of *Kluyveromyces* that would reduce cholesterol when administered to a subject and there is no suggestion at all to incorporate (or for method

Claims 15 and 16, administer) any amount of this yeast into a composition for the purpose of reducing cholesterol levels.

Assuming *arguendo*, that there were some suggestion in Muys for reducing the oxidation of fat foods as a means to reducing cholesterol levels, the Applicants submit that it is generally known that if the lipids (fats) in food are excessively ingested, it is highly likely to accelerate an abnormal elevation of plasma cholesterol level, see page 2, lines 6-10, which reads as follows:

*Another important cause of elevated plasma is excessive fat consumption caused by the recent dietary custom of consuming a large quantity of eggs, butter, meat, etc., to the extent that excessive fat consumption has become the general habit for younger people.*

However, it is not necessarily possible to effectively suppress the elevation of cholesterol level even if the oxidization level of lipids could be successfully suppressed. Thus, this factor does not inevitably play an important role in accelerating the production of cholesterol. This is shown below by reference to excerpts from two scientific publications Staprans et al., "Oxidized lipids in the diet accelerate the development of fatty streaks in cholesterol-fed rabbits", *Arterioscler. Thromb. Vasc. Biol.*, 1996, 16, 533-538 and Eder K et al., "Plasma thyroxine and cholesterol. concentration of miniature pigs are influenced by thermally oxidized dietary lipids." *J. Nutr.*, 2000, 130, 116-121).

Staprans et al. indicates:

"As expected, serum cholesterol levels increased in both diet groups (control and oxidized-lipid diets). After initiation of either diet, both of which contained 0.25% cholesterol, serum cholesterol concentrations were markedly increased at 2 weeks and reached maximum levels at 4 weeks. At the end of the experiment (12 to 14 weeks), mean serum cholesterol level was  $22.22 \pm 4.12$  mmol/L for the control group and  $19.55 \pm 2.58$  mmol/L for the oxidized-diet group (NS)\*" (see page 535, left column, Fig.1; and left column, 12th, line to 4th line from the bottom). (\*: The abbreviation "NS" means "not significant".)

Eder et al. indicates:

*"Concentrations of cholesterol in plasma and lipoproteins. Pigs fed the oxidized oil had lower concentrations of cholesterol in plasma, HDL and LDL than pigs fed the fresh oil" (Table 4). The reduction of cholesterol due to the oxidized oil was similar in HDL and LDL. The relationship between cholesterol in HDL and LDL did the therefore not differ between the two groups of pigs ( $3.07 \pm 0.10$  vs  $2.91 \pm 0.12$  in pigs fed oxidized oil and pigs fed fresh oil)" (see page 18, right column, Table 44 and right column, 31st line to 42nd line.)*

As discussed above, the prior art does not disclose with sufficient specificity, nor suggest selection of, a strain or an amount of *Kluyveromyces* that would reduce cholesterol and therefore cannot anticipate or render the present invention obvious. *A fortiori* (for an even stronger reason), a similar argument applies to the method of treatment claims, because there is no suggestion in the prior art to administer *Kluyveromyces* for the purpose of reducing cholesterol. Accordingly, the Applicants respectfully request that this rejection be withdrawn.

### CONCLUSION

In view of the above amendments and remarks, the Applicants respectfully submit that this application is now in condition for allowance. Early notification to that effect is earnestly solicited.

Respectfully submitted,

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